

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Ryan D. BRUNEAU et al.

Serial No.: Unassigned

Examiner: TBD

Confirmation No.: Unassigned

Art Unit: TBD

Filed: Herewith

For: **HAPTIC TRACKBALL DEVICE**

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- ☐ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08 is enclosed.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. 09/507,539 to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).
- ☐ Enclosed is a copy of a non-English publication(s) ___. English language publication ___ (copy enclosed) claims priority from this non-English publication.

- ☐ Enclosed is an explanation of non-English publication(s) ___ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) ___ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed within any one of the following time periods:


- ☒ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in this international application;
- ☐ before the mailing date of a first office action on the merits; or
- ☐ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: March 15, 2004

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Please type a plus sign (+) inside this box → +

PTO/SB/08A (08-00)

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	Unassigned
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		First Named Inventor	Ryan D. BRUNEAU et al.
		Group Art Unit	Unassigned
		Examiner Name	Unassigned
Sheet	1 of 7	Attorney Docket Number	IMMR-069/01US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
	A1	6,219,034		Elbing et al.	04/17/2001
	A2	6,211,861		Rosenberg et al.	04/03/2001
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¹ Unique citation designation number.

² See attached Kinds of U.S. Patent Documents.

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		<i>Complete if Known</i>	
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		Group Art Unit	Unassigned
Examiner Name	Unassigned		
Sheet	2 of 7	Attorney Docket Number	IMMR-069/01US

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Examiner Signature	Date Considered
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U.S. PATENT DOCUMENTS					
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FOREIGN PATENT DOCUMENTS						
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		Office ¹	Number ²	Kind Code ³ (if known)		
	B1		0 349 086	A1	Stork Kwant B.V.	01/03/1990
	B2		0 265 011	A1		04/27/1988
	B3		0 607 580	A1		07/27/1994
	B4		0 626 634	A2		11/30/1994
	B5		WO 92/00559			01/09/1992
	B6		WO 97/31333			08/28/1997
	B7		WO 00/03319			01/20/2000
	B8		WO 95/20788			08/03/1995
	B9		WO 97/21160			06/12/1997
	B10		WO 00/21071			04/13/2000
	B11		0085518	A1		02/21/1983
	B12		875819			04/11/1998
	B13		WO 95/12188			05/04/1995
	B14		S62-194389			12/10/1997

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²	
	C1	Baigrie, "Electric Control Loading – A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990		
	C2	Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993		
	C3	Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> pp. 1-131, May 1990, archived 8/14/90		
	C4	Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11</i> , NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985		
	C5	Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990		
	C6	Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," <i>1993 IEEE International Conference on Robotics and Automation</i> , pp. 25-44, 05/02/1993		
	C7	Snow et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989		
	C8	Ouh-Young, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990		
	C9	Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90		
	C10	Caldwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993		
	C11	Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992		
	C12	Gotow et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337		

¹ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

² For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

³ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁴ Applicant is to place a check mark here if English language Translation is attached.

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
	C13	Stanley et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 55-61, ASME 1992	
	C14	Russo, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 63-70, ASME 1992	
	C15	Kontarinis et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993	
	C16	Patrick et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al, Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990	
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	C25	Terry et al., "Tactile Feedback In A Computer Mouse," <i>Proceedings of Fourteenth Annual Northeast Bioengineering Conference</i> , University of New Hampshire, March 10-11, 1988	
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	C27	Eberhardt et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993	
	C28	Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987	
	C29	Bejczy et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference, The American Society of Mechanical Engineers</i> , San Francisco, CA, August 12-15, 1980	
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	C31	Ouhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
	C32	Marcus, "Touch Feedback in Surgery," <i>Proceedings of Virtual Reality and Medicine The Cutting Edge</i> , Sep. 8-11, 1994	
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		First Named Inventor	Ryan D. BRUNEAU et al.
		Group Art Unit	Unassigned
		Examiner Name	Unassigned
Sheet	6 of 7	Attorney Docket Number	IMMR-069/01US

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	C41	Wiker, S. et al., "Development of Tactile Mice for Blind Access to Computers: Importance of Stimulation Locus, Object Size and Vibrotactile Display Resolution," Proc. of Human Factors Society 35 th Annual Meeting 1991, pp. 708-712	
	C42	Buttolo et al., "Pen-Based Force Display for Precision Manipulation in Virtual Environments," 0-8186-7084 IEEE Mar. 1995, pp. 217-224	
	C43	Rosenberg et al., "The Use of Force Feedback to Enhance Graphical User Interfaces," Stereoscopic Displays & Virtual Reality Systems III (1996), Proc. SPIE 2653, pp. 243-248	
	C44	Schmult et al., "Application Areas for A Force-Feedback Joystick," DSC-Vol. 49, Advances in Robotics, Mechatronics, and Haptic Interfaces, ASME 1993, pp. 47-54	
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	C47	Kelley et al., "On the Development of a Force-Feedback Mouse and Its Integration Into a Graphical User Interface," Symp. On Haptic Interfaces for Virtual Envir. And Teleoperator Systems, 1994 Int'l Mech. Eng. Congress and Exhibition, Nov. 1994	
	C48	Iwata, H., "Artificial Reality with Force-Feedback: Development of Desktop Virtual Space with Compact Master Manipulator," Computer Graphics, Vol. 24, No. 4, Aug. 1990, pp. 165-170	
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	C50	Rosenberg et al., "Commercially Viable Force Feedback Controller for Individuals with Neuromotor Disabilities," USAF Armstrong Lab., May 1996	
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	C53	Rosenberg, L., "A Force Feedback Programming Primer – For PC Gaming Peripherals Supporting I-Force 2.0 and Direct – X 5.0," Immersion Corporation, 1997, pgs. 1-176	
	C54	Munch et al., "Intelligent Control of Haptic Displays," Eurographics '96, Vol. 15, No. 3, 1996, pgs. 217-226	
	C55	Brooks, Jr. et al., "Project GROPE, Haptic Displays for Scientific Visualization," Computer Graphics, Vol. 24, #4, 1990, pgs. 177-184	
	C56	Batter et al., "Grove-1: A Computer Display to the Sense of Feel," Proc. IFIP Congress, 1971, pgs. 759-763	
	C57	Gotow et al., "Perception of Mechanical Properties at the Man-Machine Interface," IEEE CH2503-1, 1987, pgs 688-690	
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	C59	Atkinson et al., "Computing with Feeling," Comput. & Graphics, Vol. 2, 1977, pgs. 97-103	
	C60	Minsky et al., "Feeling & Seeing: Issues in Force Display," ACM089791-351-5, 1990, pgs. 235-242, 270	
	C61	Adelstein et al., "Design & Implementation of a Force Reflecting Manipulandum for Manual Control Research," 1992, NASA – Ames Research Center and MIT, pgs. 1-26	
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	C67	Rosenberg, L., "Virtual Fixtures as Tools to Enhance Operator Performance in Telepresence Environments," SPIE Manipulator Technology, 1993, pgs. 1-12	
	C68	Rosenberg et al., "Perceptual Decomposition of Virtual Haptic Surfaces," Proc. IEEE Symposium on Research Frontiers in Virtual Reality, 1993, pgs. 1-8	

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
	C69	Yokokoji et al., "What you can see is what you can feel," IEEE-0-8186-7295-1, 1996, pgs. 46-54	
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